

In re the application of

Hashimoto, et al.

TI-12592A.23

Serial No. 10/816,076

Art Unit: 2188

Filed: 3/31/2004

Examiner: J. Lane

Title: Synchronous DRAM System with Control Data

## Information Disclosure Statement A, B, C, and D

December 7, 2004

Asst. Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

MAILING CERTIFICATE UNDER 37 C.F.R. \$1.8(A) I hereby certify that the above correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Ast. Commissioner for Patents, (P.O. Box 1450, Alexandria, VA 22313-1450 on December 7, 2004.

Lawrence J. Bassuk, Reg. No. 29.043

Dear Sir:

Applicants request consideration of the patents and other documents listed on enclosed forms PTO-1449.

Applicants combine four Information Disclosure Statements to bring art to the attention of the examiner. In previous applications, these four Information Disclosure Statements had been submitted separately. The separate statements identified the source of the listed references, as follows:

Information Disclosure Statement A had listed art from ancestor applications to this application, listed art from a later filed application for a synchronous DRAM and listed other patents owned by the assignee Texas Instruments Incorporated;

Information Disclosure Statement B had listed art cited in a search requested by Texas Instruments and conducted by the European Patent Office;

12/15/2004 JADDO1 00000038 200668 10816076 01 FC:1806 180.00 DA Information Disclosure Statement C had listed art cited in U. S. Patent 5,319,755 to Farmwald and assigned to RAMBUS, Inc.; and

Information Disclosure Statement D had listed art cited in U. S. Patent 4,789,960 to Willis, cited in the European search.

Each of the attached Forms 1449 identifies one of the above described Information Disclosure Statements as the source of the listed art.

Under 37 CFR 1.98(d), no copy of the cited art is provided in this application. A copy of the cited art was previously cited and submitted to the Office in application Number 08/362,289, filed December 22, 1994. That application is relied upon for an earlier filing date under 35 U.S.C. 120.

Concise explanations of the listed patents and other documents that disclose a clock signal applied to or received by a memory part occur in Attachment A. Applicants' undersigned representative has looked at every listed reference and applicants believe that they have noted every patent or other document that discloses a clock signal applied to or received by a memory part; applicants cannot exclude however the possibility of unintentionally missing some such disclosure.

Under Rule 97(h), the filing of this information disclosure statement shall not be construed to be an admission that the information cited in this statement is, or is considered to be material to patentability as defined in Rule 56(b).

Div. of Serial No.: 10/190,017

IDS A, B, C, D

Please consider this statement as being filed under Rule 97(c), after the period specified in Rule 97(b), but before the mailing date of either a final action, or a notice of allowance. Under Rule 97(c), applicant submits the fee set forth in Rule 17(p). Please charge the fee under Rule 17(p) of \$130.00 to Deposit Account Number 20-0668 of Texas Instruments Incorporated.

We enclose two copies of this sheet.

Respectfully submitted

Lawrence J. Bassuk Reg. No. 29,043

Attorney for Applicant

Texas Instruments Incorporated P. O. Box 655474, MS 3999 Dallas, Texas 75265 (972) 917-5458

		INFORMATIO	ON DISCLO	SURE STA	TEMEN	T A		Page 1 of 3
FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (REV. 7-80) PATENT AND TRADEMARK OFFICE						ATTY. DOCKET NO. SERIAL NO.		
(Use several sheets if necessary)					TI-12592A.23 10/816,076			
10	الت				APPLICAN	T		
DEC 1 3 MICH SE					Hashimoto, et al.			
				FILING DATE GROUP		GROUP		
				March 31, 2004 2188				
U.S. PATENT DOCUMENTS								
+EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAN	Œ	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)

		U.S. PAIE	MI DOCOMENIA			
+EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE
	3,895,360	07/15/75	Cricchi, et al.	340	173R	01/29/74
	3,962,689	06/08/76	Brunson	340	173R	11/21/74
	4,120,048	10/10/78	Fuhrman	365	239	12/27/77
	4,321,695	03/23/82	Redwine, et al.	365	174	11/23/79
	4,509,142	04/02/85	Childers	364	900	12/15/82
	4,581,721	04/08/86	Gunawardana	365	230	10/25/82
	4,608,678	08/26/86	Threewitt	365	189	09/28/84
	4,633,441	12/30/86	Ishimoto	365	189	09/28/84
	4,796,224	01/03/89	Kawai et al	365	51	02/17/87
	4,833,651	05/23/89	Seltzer, et al.	365	189.07	05/23/98
	4,999,814	03/12/91	Hashimoto	365	222	08/07/87
	4,567,579	01/28/86	Patel et al.	365	189	07/08/83
	4,618,947	10/21/86	Tran et al.	365	230	07/26/84
	4,685,089	08/04/87	Patel et al.	365	233	08/29/84
				·		
		-				
			-			
		1				
		74				
					<u> </u>	<del> </del>

EXAMINER

DATE CONSIDERED

ATTY. DOCKET NO. SERIAL NO. U.S. DEPARTMENT OF COMMERCE FORM PTO-1449 PATENT AND TRADEMARK OFFICE (REV. 7·80) 10/816,076 TI-12592A.23 LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) APPLICANT Hashimoto, et al. GROUP FILING DATE March 31, 2004 2188 FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT **SUBCLASS** COUNTRY CLASS DATE NUMBER Χ 8/00 G 11 C 59 56276 9/24/1982 Japan DATE CONSIDERED **EXAMINER** +EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not

considered. Include copy of this form with next communication to applicant.

FORM PTO·1449 (REV. 7·80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.					
LIST O	F DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)	TI-12592A.23	10/816,076					
	, , ,	APPLICANT						
		Hashimoto, et al.						
		FILING DATE	GROUP					
		March 31, 2004	2188					
	OTHER DOCUMENTS (Including Author, Title	e, Date, Pertinent Pages, Et	c.)					
Bell Laboratories, Incorporated, <u>Transmission Systems for Communications</u> , 5th Edition, 1982, pp. 590-591.								
	Cole, Bernard C., "Motorola's Radical SRAM De Electronics", July 23, 1987, pp. 66-68.	sign Speeds Systen	ns 40%,					
	Hashimoto, Masashi et al., "A 20-ns 256K X 4 F State Circuits, Vol. 23, No. 2, April 1988, pp. 490		Journal of Solid-					
	Hashimoto, Masashi et al., "A 20 ns 256K X 4 F Integrated Circuits Conference, May 4-7, 1987,		1987 Custom					
	Horowitz, Mark et al., "MIPS-X: A 20-MIPS Peak Cache", IEEE Journal of Solid-Circuits, Vol. SC-							
	Lineback, J. Robert, "System Snags Shouldn't Slow the Boom in Fast Static RAMS", Electronics, July 23, 1987, pp. 60-62.							
	Miyaguchi et al., "A Field Store System With Single 1Mbit Field Memory", IEEE Transactions on Consumer Electronics, Vol. 34, No. 3, August 1988, pp. 397-401.							
	Morris, S. Brent et al., "Processes for Random and Sequential Accessing in Dynamic Memories", IEEE Transactions on Computers, Vol. C-28, No. 3, March 1979, pages 225-237.							
	Motorola, :16Kx4 Bit Synchronous Statis RAM with Output Registers and Output Enable", Motorola Semiconductor Technical Data, MCM6293.							
	Motorola, "16Kx4 Bit Synchronous Statis RAM w Enable", Motorola Semiconductor Technical Dat		s and Output					
	Nakagawa et al., "A 1 Mb Field Memory For TV Integrated circuits Conference, Pages 319-322.	Pictures", IEEE 198	7 Custom					
	Ohara, Kazuhiro et al., "A Field Store System W Digest of Technical Papers", pages 70-71, June,	ith Single 1Mbit Fiel 1988.	d Memory, ICCE					
	Wada, R. et al., "A Color Television Receiver Wi Transactions on Consumer Electronics, Vol. 4, N							
EXAMINER		DATE CONSIDERED						
- DV ANTINDA T 11 1	(C. C	NED 600: D 1' 1						

INFORMATION DISCLOSURE STATEMENT B Page 1 of 2								
FORM PTO-1449 (REV. 7-80)						ATTY. DOCKET NO. SERIAL NO.		
LATE .	F-DOCUMENTS C	ITED BY APPL	TI-1	12592A.23	10/816,076			
6	(Use several sheets			APPI	LICANT			
1	2000			Has	shimoto, et al.			
DEC 13	7004			FILI	NG DATE	GROUP		
3	WEET .				rch 31, 2004	2188		
STEMI & THI	ADIC	U.S. PA	TENT DOCUM					
+EXAMINER INITIAL	DOCUME NUMBE		E NA	ME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)	
	4,549,28	33 10/22/	/85 McDermot	, III	365	194	09/06/83	
	4,899,3				365	189.01	12/29/86	
					·			
							-	
							-	
						<del> </del>		
							-	
							+	
						+		
						<del>                                     </del>		
				·		<del>                                     </del>		
							1	
					·			
						1		
				_			+	
						-		
						<del>                                     </del>		
						+		
DYAMES				DAM	E CONCIDERED		1	
EXAMINER		XAMINER DATE CONSIDERED						

FORM PTO-1449 ATTY, DOCKET NO. SERIAL NO. U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE (REV. 7.80) TI-12592A.23 10/816,076 LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) APPLICANT Hashimoto, et al. FILING DATE GROUP 2188 March 31, 2004 FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT SUBCLASS DATE COUNTRY CLASS NUMBER Χ G 11 C 8/00 0,147,268 A2 07/1985 Europe G 11 C 8/00 Χ 0,276,870 A2 07/1985 Europe Χ 62 152 050 G 06 F 07/1987 12/00 Japan 0,162,234 A2 11/1985 G 11 C 8/00 Europe DATE CONSIDERED **EXAMINER** 

FORM PTO-1449 (REV. 7-80) LIST OF DOCUMENTS CITED BY APPLICANT

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

(Use several sheets if necessary)

TI-12592AA.23

SERIAL NO.

ATTY. DOCKET NO.

10/816,076

APPLICANT

Hashimoto, et al.

FILING DATE March 31, 2004 **GROUP** 2188

U.S. PATENT DOCUMENTS

(9)1111	<del></del>	U.S. TATE	11 DOCUMENTS	<del></del>	<del></del>	
+EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE
	3,740,723	06/1973	Beausoleil et al	395	425 .	
	3,758,761	09/1973	Henrion	371	8.1	
	3,771,145	11/1973	Wiener	365	240	
	3,821,715	06/1974	Hoff et al.	340	173	
	3,882,470	05/1975	Hunter	364	200	
	3,924,241	12/1975	Kronies	395	425	
	3,969,706	07/1976	Proebsting et al.	365	189.02	
	3,972,028	07/1976	Weber et al.	395	425	
	3,975,714	08/1976	Weber et al.	395	800	
	3,983,537	09/1976	Parsons et al.	395	425	
	4,007,452	02/1977	Hoff	365	63	
	4,038,648	07/1977	Chesley	365	201	
	4,099,231	07/1978	Kotok et al.	395	425	
	4,191,996	03/1980	Chesley	395	425	
	4,205,373	05/1980	Shah	395	425	
	4,247,817	01/1981	Heller	307	354	
	4,249,247	02/1981	Patel	395	425	
	4,286,321	08/1981	Baker et al.	364	200	
	4,306,298	12/1981	McElroy	395	425	
	4,315,308	02/1982	Jackson	364	200	
	4,333,142	06/1982	Chesley	395	500	
	4,355,376	10/1982	Gould	365	200	
	4,373,183	02/1983	Means et al.	395	400	
	4,385,350	05/1983	Hansen et al.	365	229	
	4,443,864	04/1984	McElroy	395	325	
	4,449,207	05/1984	Kung et al.	365 <sup>-</sup>	189.02	
	4,468,738	08/1984	Hansen et al.	395	325	
	4,470,114	09/1984	Gerhold	395	325	
	4,481,625	11/1984	Roberts et al.	370	85	
	4,488,218	12/1984	Grimes	395	325	
	4,500,905	02/1985	Shibata	357	68	
	4,519,034	05/1985	Smith et al.	395	550	
	4,595,923	06/1986	McFarland, Jr.	340	825.5	

**EXAMINER** 

DATE CONSIDERED

<sup>+</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ATTY, DOCKET NO. SERIAL NO. U.S. DEPARTMENT OF COMMERCE FORM PTO-1449 (REV. 7-80) PATENT AND TRADEMARK OFFICE TI-12592AA.23 10/816,076 LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) APPLICANT Hashimoto, et al. FILING DATE GROUP March 31, 2004 2188 U.S. PATENT DOCUMENTS +EXAMINER DOCUMENT FILING DATE SUBCLASS NUMBER DATE NAME CLASS (IF APPROPRIATE) INITIAL 395 4.630.193 12/1986 Kris 325 02/1987 Voss 365 189.02 4,646,270 03/1987 Gdula 395 425 4,649,511 4,649,516 03/1987 Chung et al. 395 250 340 Kowalski 825.5 4,654,655 03/1987 4,706,166 11/1987 Go 361 403 371 40.2 4,719,627 01/1988 Peterson et al. 395 4,745,548 05/1988 Blahut 425 Go 361 388 4,764,846 08/1988 09/1988 Walter 439 69 4,770,640 4,779,089 10/1988 Theus 340 825.5 4,785,394 11/1988 Fischer 395 325 9/1986 Schabowski 395 325 10/1981 4,811,202 03/1989 4,818,985 04/1989 lkeda 340 825.5 11/1987 395 325 4,837,682 06/1989 Culler 4/1987 08/1989 Takenaka 364 200 9/1985 4,860,198 06/1990 Sachs et al. 364 200 1/1989 4,933,835 12/1990 Baudouin et al. 357 74 3/1988 4,975,763 5,023,488 06/1991 Gunning 307 475 3/1990 395 325 Farmwald et al. 12/1989 5.179.670 01/1993 5,319,755 06/1994 Farmwald et al. 395 325 4/1990 DATE CONSIDERED **EXAMINER** 

<sup>+</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.						
	OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)	TI-12592AA.23	10/816,076						
	,	APPLICANT							
		Hashimoto, et al.							
		FILING DATE	GROUP						
		March 31, 2004	2188						
	OTHER DOCUMENTS (Including Author,	Title, Date, Pertinent Pages, E	tc.)						
	Hawley, David, "Superfast Bus Supports Sop Performance Systems, Sep. 1989.								
	T. Yang, M. Horowitz, B. Wooley, "A 4-ns 4K) Journal of Solid-State Circuits, Vol. 23, No. 5,			·					
	"Burndy Connects Advertisement," Electronic 24, 1986).	Engineering Times, p	p. T24-T25 (Feb.						
	A. Kahn, "What's the Best Way to Minimize M Systems, pp. 59-67 (Sep. 1989).	lemory Traffic," High P	erformance						
	N. Margulis, "Single Chip RISC CPU Eases S Systems, pp. 34-36, 40-41, 44 (Sep. 1989).								
	lity in Virtual rant Computing, 23-227 (Jun. 22,								
	Agarwal et al., "Scaleable Director Schemes to Sump. Comp. Architecture, pp. 280-289 (Jun.		," 15th Intern.						
	Agarwal et al., "An Analytical Cache Model," A No.2, pp. 184-215 (May 1989).	ACM Trans. on Compu	ıter Systems, Vol. 7						
	Davidson, "Electrical Design of a High Speed Develop., Vol. 26, No. 3, pp. 349-361 (1982).	Davidson, "Electrical Design of a High Speed Computer Package", IBM J. Res. Develop., Vol. 26, No. 3, pp. 349-361 (1982).							
	Hart, "Multiple Chips Speed CPU Subsystems (Sep. 1989).	Hart, "Multiple Chips Speed CPU Subsystems", High-Performance Systems, pp. 26-55 (Sep. 1989).							
	Beresford, "How to Tame High Speed Design (Sep. 1989).	", High-Performance	Systems, pp. 78-83						
	Carson, "Advance On-Focal Plane Signal Pro SPIE, Vol. 311, pp. 53-58 (1981).	cessing for Non-Plana	ır Infared Mosaics,"						
	Horowitz et al., "MIPS-X: A 20-MIPS Peak 32 Cache," IEEE J. Solid State Circuits, Vol. SC-	-Bit Microprocessor w -22, No. 5, pp. 790-79	th ON-Chip 9 (Oct. 1987).						
	Kwon et al., "Memory Chip Organizations for IBM Technical Disclosure Bulletin, Vol. 25, No.								
	Pease et al., "Physical Limits to the Useful Pa IBM J. Res. Develop. Vol. 32 No. 5, (Sep, 198		ectronic Systems,"						
	Peterson, "System-Level Concerns Set Perfo Systems, pp. 71-77 (Sep. 1989).	rmance Gains," High-F	Performance						
EXAMINER		DATE CONSIDERED							

## INFORMATION DISCLOSURE STATEMENT C

Page 4 of 4

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE ATTY. DOCKET NO. SERIAL NO. (REV. 7.80) PATENT AND TRADEMARK OFFICE TI-12592AA.23 10/816,076 LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary) APPLICANT Hashimoto, et al. FILING DATE GROUP March 31, 2004 2188 OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.) Wooley et al., "Active Substrate System Integration," Private Communication, Semiconductor Research Corporation, 4 pages (Mar. 15, 1988). H. Schumacher, "CMOS Subnanosecond True-ECL Output Buffer," IEEE Journal of Solid-State Circuits, Vol. 25, No. 1, pp. 150-154 (Feb. 1990). DATE CONSIDERED **EXAMINER** +EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not

considered. Include copy of this form with next communication to applicant.

•	INFORMATIO	ON DISCLO	SURE STA	TEMEN	T D		Page 1 of 2
FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (REV. 7-80) PATENT AND TRADEMARK OFFICE				ATTY. DOCKET NO.		SERIAL NO.	
LETOF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)				TI-12592A.23		10/816,076	
lo and			APPLICAN				
			Hashimoto, et al.				
			FILING DATE GROUP				
PATENT &	MADE			March 31	., 2004	2188	
		U.S. PATEN	NT DOCUME	NTS			
+EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAN	Æ	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	3,956,737	05/11/76	Ball		340	172.5	07/12/74
	4,152 ,781	05/01/79	Aichelmann	, Jr	365	239	06/30/78
	4,225,947	09/30/80	Councill et a	al	365	238	12/29/78
	4,375,084	03/22/83	Urushibata		364	900	06/29/79
	4,388,696	06/14/83	Test, II et al	•	364	900	07/14/80
	4,415,994	11/15/83	lve et al.		365	189	09/14/81
	4,435,792	03/06/84	Bechtolshei	<u>m</u>	365	230	06/30/82
	4,493,060	01/08/85	Varshney		365	238	10/29/83
	4,558,377	12/10/85	Collins et al	·	360	10.1	05/05/82
	4,608,669	08/26/86	Klara et al.		365	201	05/18/84
	4,664,502	02/17/87	Kawashima		365	219	03/26/84
	4,667,313	05/19/87	Pinkham et	al.	365	240	0122/85
	4,789,960	12/06/88	Willis		364	900	01/30/87
		<u>.</u>					
					ļ		
			ļ. <u></u>				
			1				
			1			1	1

+EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

EXAMINER

DATE CONSIDERED

FORM PTO-14 (REV. 7-80)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO.	SERIAL NO.				
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)		TI-12592A.23	10/816,076				
	(Use several streets if necessary)	APPLICANT					
	/0	Hashimoto, et al.	Ď.				
	DEC 1 3 2004	FILING DATE	GROUP				
		March 31, 2004	2188				
	OTHER DOCUMENTS (Including Author, Title	e, Date, Pertinent Pages, E	rc.)				
Kimura et al., "Power Reduction Techniques in Megabit DRAM's", IEEE Journal of Solid-State Circuits, Vol. SC-21, No. 3, June 1968.							
	Nogami et al., "1-Mbit Virtually Static RAM, IEEE SC-21, No. 5, October 1986.	Journal of Solid-St	ate Circuits", Vol.				
	Ohta et al., "A 1-Mbit DRAM with 33-MHz Serial State Circuits, Vol. SC-21, No. 5, October 1986.	I/O Ports", IEEE Jo	ournal of Solid-				
		····					
EXAMINER		DATE CONSIDERED					
+EXAMINER: considered. In	Initial if reference considered, whether or not citation is in conformance with MI lude copy of this form with next communication to applicant.	PEP 609; Draw line through	h citation if not in conformance and not				